What is claimed is:

1. A method of detecting ischemia within a brain of a patient, the method comprising:

assigning a first value to a first signal generated by a tissue on the right-hand side of the body;

assigning a second value to a second signal generated by a tissue on the left-hand side of the body; and

comparing the first value and the second value, wherein a difference between the first value and the second value indicates that ischemia is present within the brain.

2. The method of claim 1, further comprising:

applying a first stimulus to the left-hand side of the body;

receiving the first signal in response to the first stimulus;

applying a second stimulus to the right-hand side of the body; and

receiving the second signal in response to the second stimulus.

3. The method of claim 2, wherein the first stimulus or the second stimulus comprises an electrical stimulus.

4. The method of claim 2, wherein the first stimulus or the second stimulus comprises an auditory stimulus or a visual stimulus.

5. The method of claim 2, wherein the first stimulus or the second stimulus comprises a stimulus to the patient's skin or an underlying muscle.

6. The method of claim 2, wherein the first stimulus is applied to a sensory organ on the left-hand side of the body and the first signal is generated by the right hemisphere of the brain.

7. The method of claim 6, wherein the second stimulus is applied to a sensory organ on the right-hand side of the body and the second signal is generated by the left hemisphere of the brain.

8. The method of claim 7, wherein the sensory organ is the eye or ear and the first signal or the second signal is an electrical signal.

9. The method of claim 8, wherein the first electrical signal is a first somatosensory evoked potential (SSEP) and the second signal is a second SSEP.

10. The method of claim 9, wherein the first value is based on an amplitude of the first SSEP and the second value is based on an amplitude of the second SSEP.

11. The method of claim 9, wherein the first value is based on a latency of the first SSEP and the second value is based on a latency of the second SSEP.

12. The method of claim 2, wherein the first stimulus is applied to a nerve innervating a muscle on the left-hand side of the body and the first signal is generated by the right hemisphere of the brain.

13. The method of claim 12, wherein the second stimulus is applied to a nerve innervating a muscle on the right-hand side of the body and the second signal is generated by the left hemisphere of the brain.

14. The method of claim 13, wherein the nerve is the median nerve, ulnar nerve, common peroneal nerve, or posterior tibial nerve.

15. The method of claim 13, wherein the first electrical signal is a first SSEP and the second signal is a second SSEP.

16. The method of claim 15, wherein the first value is based on an amplitude of the first SSEP and the second value is based on an amplitude of the second SSEP.

17. The method of claim 15, wherein the first value is based on the latency of the first SSEP and the second value is based on the latency of the second SSEP.

18. The method of claim 2, wherein the first stimulus is applied to the left hemisphere of the brain and the first signal is generated by a muscle on the right-hand side of the body.

19. The method of claim 18, wherein the second stimulus is applied to the right hemisphere of the brain and the second signal is generated by a muscle on the left-hand side of the brain.

20. The method of claim 19, wherein the first stimulus or second stimulus is an electrical stimulus or magnetic stimulus.

21. The method of claim 20, wherein the first signal or the second signal is a muscular contraction.

22. The method of claim 20, wherein the first signal or the second signal is a motor unit potential.

23. The method of claim 22, wherein the first value is based on the amplitude of the motor unit potential.

24. The method of claim 22, wherein the first value is based on the latency of the motor unit potential.

25. The method of claim 1, wherein the first signal is a ratio of the oxyhemoglobin:deoxyhemoglobin concentration in the right hemisphere of the brain and

the second signal is a ratio of the oxyhemoglobin:deoxyhemoglobin concentration in the left hemisphere of the brain.

26. The method of claim 6, wherein the first signal is generated by a region of the brain vascularized by the anterior cerebral artery, the middle cerebral artery, or the posterior cerebral artery.

27. The method of claim 1, wherein the patient is a human patient.

28. An article comprising a machine-readable medium that stores executable instructions for detecting ischemia within a brain of a patient, the instructions causing a machine to:

assign a first value to a first signal generated by a tissue on the right-hand side of the body;

assign a second value to a second signal generated by a tissue on the left-hand side of the body; and

compare the first value and the second value, wherein a difference between the first value and the second value indicates that ischemia is present within the brain.

29. The article of claim 28, further comprising instructions causing a machine to:

apply a first stimulus to the left-hand side of the body;

receive the first signal in response to the first stimulus;

apply a second stimulus to the right-hand side of the body; and

receive the second signal in response to the second stimulus.

30. The article of claim 29, wherein the first stimulus or the second stimulus comprises an electrical stimulus.

31. The article of claim 29, wherein the first stimulus or the second stimulus comprises an auditory stimulus or a visual stimulus.

32. The article of claim 29, wherein the first stimulus or the second stimulus comprises a stimulus to the patient's skin or an underlying muscle.

33. The article of claim 29, wherein the first stimulus is applied to a sensory organ on the left-hand side of the body and the first signal is generated by the right hemisphere of the brain.

34. The article of claim 33, wherein the second stimulus is applied to a sensory organ on the right-hand side of the body and the second signal is generated by the left hemisphere of the brain.

35. The article of claim 34, wherein the sensory organ is the eye or ear and the first signal or the second signal is an electrical signal.

36. The article of claim 35, wherein the first electrical signal is a first somatosensory evoked potential (SSEP) and the second signal is a second SSEP.

37. The article of claim 36, wherein the first value is based on an amplitude of the first SSEP and the second value is based on an amplitude of the second SSEP.

38. The article of claim 37, wherein the first value is based on a latency of the first SSEP and the second value is based on a latency of the second SSEP.

39. The article of claim 29, wherein the first stimulus is applied to a nerve innervating a muscle on the left-hand side of the body and the first signal is generated by the right hemisphere of the brain.

40. The article of claim 39, wherein the second stimulus is applied to a nerve innervating a muscle on the right-hand side of the body and the second signal is generated by the left hemisphere of the brain.

41. The article of claim 40, wherein the nerve is the median nerve, ulnar nerve, common peroneal nerve, or posterior tibial nerve.

42. The article of claim 40, wherein the first electrical signal is a first SSEP and the second signal is a second SSEP.

43. The article of claim 42, wherein the first value is based on an amplitude of the first SSEP and the second value is based on an amplitude of the second SSEP.

44. The article of claim 42, wherein the first value is based on the latency of the first SSEP and the second value is based on the latency of the second SSEP.

45. The article of claim 29, wherein the first stimulus is applied to the left hemisphere of the brain and the first signal is generated by a muscle on the right-hand side of the body.

46. The article of claim 45, wherein the second stimulus is applied to the right hemisphere of the brain and the second signal is generated by a muscle on the left-hand side of the brain.

47. The article of claim 46, wherein the first stimulus or second stimulus is an electrical stimulus or magnetic stimulus.

48. The article of claim 47, wherein the first signal or the second signal is a muscular contraction.

49. The article of claim 47, wherein the first signal or the second signal is a motor unit potential.

50. The article of claim 49, wherein the first value is based on the amplitude of the motor unit potential.

51. The article of claim 49, wherein the first value is based on the latency of the motor unit potential.

52. The article of claim 28, wherein the first signal is a ratio of the oxyhemoglobin:deoxyhemoglobin concentration in the right hemisphere of the brain and the second signal is a ratio of the oxyhemoglobin:deoxyhemoglobin concentration in the left hemisphere of the brain.

53. The article of claim 33, wherein the first signal is generated by a region of the brain vascularized by the anterior cerebral artery, the middle cerebral artery, or the posterior cerebral artery.

54. The article of claim 28, wherein the patient is a human patient.

55. An apparatus comprising:

a memory that stores executable instructions for detecting ischemia within a brain of a patient; and

a processor that executes the executable instructions to:

assign a first value to a first signal generated by a tissue on the right-hand side of the body;

assign a second value to a second signal generated by a tissue on the left-hand side of the body; and

compare the first value and the second value, wherein a difference between the first value and the second value indicates that ischemia is present within the brain.

56. The apparatus of claim 55, further comprising executable instructions to :

apply a first stimulus to the left-hand side of the body;

receive the first signal in response to the first stimulus;

apply a second stimulus to the right-hand side of the body; and

receive the second signal in response to the second stimulus.

57. The apparatus of claim 56, wherein the first stimulus or the second stimulus comprises an electrical stimulus.

58. The apparatus of claim 56, wherein the first stimulus or the second stimulus comprises an auditory stimulus or a visual stimulus.

59. The apparatus of claim 56, wherein the first stimulus or the second stimulus comprises a stimulus to the patient's skin or an underlying muscle.

60. The apparatus of claim 56, wherein the first stimulus is applied to a sensory organ on the left-hand side of the body and the first signal is generated by the right hemisphere of the brain.

61. The apparatus of claim 60, wherein the second stimulus is applied to a sensory organ on the right-hand side of the body and the second signal is generated by the left hemisphere of the brain.

62. The apparatus of claim 61, wherein the sensory organ is the eye or ear and the first signal or the second signal is an electrical signal.

63. The apparatus of claim 62, wherein the first electrical signal is a first somatosensory evoked potential (SSEP) and the second signal is a second SSEP.

64. The apparatus of claim 63, wherein the first value is based on an amplitude of the first SSEP and the second value is based on an amplitude of the second SSEP.

65 The apparatus of claim 63, wherein the first value is based on a latency of the first SSEP and the second value is based on a latency of the second SSEP.

66.The apparatus of claim 56, wherein the first stimulus is applied to a nerve innervating a muscle on the left-hand side of the body and the first signal is generated by the right hemisphere of the brain.

67. The apparatus of claim 66, wherein the second stimulus is applied to a nerve innervating a muscle on the right-hand side of the body and the second signal is generated by the left hemisphere of the brain.

68. The apparatus of claim 67, wherein the nerve is the median nerve, ulnar nerve, common peroneal nerve, or posterior tibial nerve.

69. The apparatus of claim 67, wherein the first electrical signal is a first SSEP and the second signal is a second SSEP.

70. The apparatus of claim 69, wherein the first value is based on an amplitude of the first SSEP and the second value is based on an amplitude of the second SSEP.

71. The apparatus of claim 69, wherein the first value is based on the latency of the first SSEP and the second value is based on the latency of the second SSEP.

72. The apparatus of claim 56, wherein the first stimulus is applied to the left hemisphere of the brain and the first signal is generated by a muscle on the right-hand side of the body.

73. The apparatus of claim 72, wherein the second stimulus is applied to the right hemisphere of the brain and the second signal is generated by a muscle on the left-hand side of the brain.

74. The apparatus of claim 73, wherein the first stimulus or second stimulus is an electrical stimulus or magnetic stimulus.

75. The apparatus of claim 74, wherein the first signal or the second signal is a muscular contraction.

76. The apparatus of claim 74, wherein the first signal or the second signal is a motor unit potential.

77. The apparatus of claim 76, wherein the first value is based on the amplitude of the motor unit potential.

78. The apparatus of claim 76, wherein the first value is based on the latency of the motor unit potential.

79. The apparatus of claim 55, wherein the first signal is a ratio of the oxyhemoglobin:deoxyhemoglobin concentration in the right hemisphere of the brain and the second signal is a ratio of the oxyhemoglobin:deoxyhemoglobin concentration in the left hemisphere of the brain.

80. The apparatus of claim 60, wherein the first signal is generated by a region of the brain vascularized by the anterior cerebral artery, the middle cerebral artery, or the posterior cerebral artery.

81. The apparatus of claim 55, wherein the patient is a human patient.